


Doc Coord. AP.PRS REQ

PTO/SB/33 (07/05)

Approved for use through xx/xx/200x. OMB 0651-00xx

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

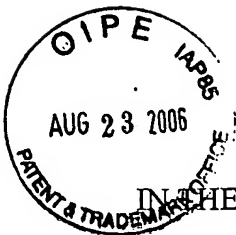
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional)	
		ITL.1076US (P18261)	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR		Application Number	Filed
on <u>August 21, 2006</u>		10/761,575	January 21, 2004
Signature <u>Cynthia L. Hayden</u>		First Named Inventor	
Typed or printed name <u>Cynthia L. Hayden</u>		Yuegang Zhang	
		Art Unit	Examiner
		2813	Thanhha S. Pham
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.			
This request is being filed with a notice of appeal.			
The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the			
<input type="checkbox"/> applicant/inventor.		Signature	
<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)		Timothy N. Trop	
<input checked="" type="checkbox"/> attorney or agent of record.		Typed or printed name	
Registration number <u>28,994</u>		(713) 468-8880	
		Telephone number	
<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34.		August 21, 2006	
Registration number if acting under 37 CFR 1.34 _____		Date	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			

<input type="checkbox"/> *Total of <u>1</u> forms are submitted.
--

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:

Yuegang Zhang

Serial No.: 10/761,575

Filed: January 21, 2004

For: End Functionalization  
of Carbon Nanotubes

§  
§  
§  
§  
§  
§  
§  
§  
§

Art Unit: 2813

Examiner: Thanhha S. Pham

Docket: ITL.1076US  
P18261

Assignee: Intel Corporation

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**STATEMENT IN SUPPORT OF  
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Sir:

Pre-appeal review is requested because the claims have limitations that are being ignored and because the asserted rationale to combine is that, because the missing element is known, it would be obvious to insert it into the claimed combination. Since neither of these positions is supportable, reconsideration is requested.

Claim 17 calls for a plurality of nanotubes extending between source and drain regions, the nanotubes having functionalized ends with attached functional groups. Functional groups are explained in the specification at page 6, lines 8-20 and "functionalized" and "functional groups" are well known terms of art meaning the part of a compound that takes part in reactions. See definition attached.

The cited reference to Nihey is asserted to teach ends being functionalized because they function as an electrical connection. Such an interpretation is impermissible since it merely reads

Date of Deposit: August 21, 2006

I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*Cynthia L. Hayden*  
Cynthia L. Hayden

out a well known term of art and would apply the claim to any structure using a carbon nanotube to connect source and drain. To the contrary, the claims calls for nanotubes having functionalized ends with attached functional groups. The reference teaches no functionalized ends or attached functional groups.

Therefore, reconsideration is requested.

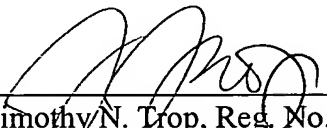
Claim 23 calls for open ended nanotubes. The rejection suggests that, while the reference fails to teach this structure because open ended nanotubes are known, it would be obvious to use them in this solution. But, of course, everything is known and, therefore, under this analysis, everything would be obvious. This is a non-statutory approach and should be rejected. Reconsideration would be appropriate.

Claim 28 calls for different functional groups attached to the opposed ends. In this support of this rejection, it is suggested that the source and drain constitute different functional groups. Of course, this is ridiculous since sources and drains are basically the same material, just differently connected to the transistor. They have no functional groups and they certainly do not have different functional groups.

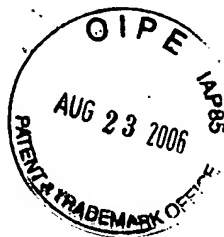
Therefore, reconsideration would be appropriate.

Respectfully submitted,

Date: August 21, 2006

  
\_\_\_\_\_  
Timothy N. Trop, Reg. No. 28,994  
TROP, PRUNER & HU, P.C.  
1616 South Voss Road, Suite 750  
Houston, TX 77057-2631  
713/468-8880 [Phone]  
713/468-8883 [Fax]

Attorneys for Intel Corporation



# Carbon is 4 ever

[Mission](#)  
[Selector](#)

## Glossary - Carbon Jargon

[Glossary](#)

[Help](#)

[Feed](#)  
[Back](#)

[Credits](#)

### Addition Reactions

An addition reaction is when a double or triple bond "opens" and another atom or group of atoms joins the molecule. Since a double or triple bond is necessary, this type of reaction is not possible with the Alkanes, only the unsaturated compounds such as the Alkenes and the Alkynes.

### Aliphatics

Carbon compounds whose structure is based on chains of carbon.

### Alkanes

Alkanes are hydrocarbons which have a single bond between the carbon atoms, i.e. they are saturated organic compounds.

### Alkenes

Alkenes are hydrocarbons which have a double bond between two carbon atoms, i.e. they are unsaturated organic compounds.

### Alkynes

Alkynes are hydrocarbons which have a triple bond between two carbon atoms, i.e. they are unsaturated organic compounds.

### Allotrope

A different physical form of the same element due to different arrangement of atoms.

### Aromatics

Carbon compounds whose structure is based on rings of carbon.

### Bromination

A test carried out on a substance or gas to determine if it has a double bond. The red bromine water turns colourless in the presence of a double bond.

### Chemical equation

Shorthand way of presenting what substances react together and what is produced. It also

Th

Abc  
Libr  
FAC

O  
EDUC

	shows the number of atoms or molecules involved in the reaction.
<b>Covalent bond</b>	A bond that consists of one or more shared pairs of electrons. Each bonded atom contributes one electron towards the shared pair.
<b>Electrons</b>	These are found orbiting the nucleus of an atom and have a negative charge. Shell(s) of electrons are present in all atoms. The inner shell of any atom has a capacity of 2 electrons and any further shells have a capacity of 8 electrons. In a neutral atom the number of protons is the same as the number of electrons.
<b>Functional group</b>	The part of a compound that takes part in the reaction.
<b>Hydrocarbon</b>	A hydrocarbon is a compound made up solely of hydrogen and carbon.
<b>Ion</b>	An ion is an atom which has lost or gained electrons and has become positively or negatively charged respectively.
<b>Ionic bond</b>	An ionic bond is produced when electrons are transferred from one atom to another.
<b>Metal carbonates</b>	A compound containing a metal, carbon and oxygen. For example Limestone has calcium, carbon and oxygen.
<b>Monomer</b>	Monomers are the small molecules which when joined together in a process known as polymerisation, form a larger molecule known as a polymer.
<b>Neutrons</b>	These are found in the centre of the atom and have no charge (i.e. It is neutral). If this number varies in a certain element you get an isotope of the element. For example, carbon-dating uses an isotope of carbon to put an age on very old artefacts found.
<b>Organic</b>	A branch of chemistry concerned solely with

<b>Chemistry</b>	carbon and its compounds.
<b>Oxidation</b>	Oxidation occurs when an atom loses electrons. It thereby becomes a positively charged <u>ion</u> , and is said to be oxidised.
<b>Polymer</b>	A polymer is the result of the polymerisation process in which small and simple molecules, called monomers, are joined together.
<b>Polymerisation</b>	Polymerisation is the process in which many small and basic molecules, called monomers, join together to form a larger and more complex molecule called a polymer.
<b>Proton</b>	These are found in the centre of the atom and have a positive (+) charge.
<b>Reduction</b>	Reduction is when an atom gains electrons.
<b>Saturated compounds</b>	Compounds in which carbon atoms are joined together by single bonds.
<b>Substitution Reaction</b>	A substitution reaction is when atoms or a collection of atoms are replaced with other atoms or another collection of atoms. This is common among the <u>Alkanes</u> .
<b>ThermoPlastics</b>	Thermoplastics are plastics capable of being softened and moulded again and again through heat and pressure. Examples include Polythene, Polyvinyl Chloride and Polystyrene.
<b>Thermosetting Plastics</b>	Thermosetting plastics can only be moulded in their manufacture and afterwards cannot be softened. Examples include Formica and Polyurethane.
<b>Unsaturated compounds</b>	Compounds in which carbon atoms are joined together by double or triple bonds.
<b>Valency</b>	The number of electrons an atom of an element must give or receive to achieve noble gas structure.

Top

**All elements of this site are copyrighted © The Carbon is 4 ever team 1999-2000,  
excluding specific items mentioned in the bibliography.**